What Vehicles are Electric? 
Replacing and Why? 
Findings from California’s Clean Vehicle Rebate Project

Purpose
This investigation aims to enhance the understanding of what would have happened had a given electric vehicle (EV) not been deployed, in order to:
1. Enable more detailed assessment of the emission and market benefits of the California Clean Vehicle Rebate Project (CVRP).
2. Inform assessment of the impacts of EV deployment in other contexts.
3. Provide broader insights into the evolving EV market.

Data

**EV rebate program overview** (as of 30 Sept. 2019)
- 8,000 rebates to individuals only
- 2015-2016 Edition
- 2016-2017 Edition

**Electric (BEV/PHEV/FCEV) Gasoline or Diesel**
- 2/3 are gasoline
- 1/3 are electric
- 1/4 are ≥12 years old

**Several findings**
- PHEVs and BEVs 80% weighed to represent the program population along the dimensions of vehicle category, vehicle model, age, and income (as of 30 Sept. 2019)
- Results: 70,029 respondents weighted to represent 315,424 rebate recipients

**What vehicles are electric vehicles replacing?**
- Replaced a vehicle with their rebated plug-in EV

**What motivated vehicle replacement?**
- Factors influencing the decision to replace by replaced-vehicle technology type

**What might have happened without the rebate?**
- Counterfactual behavior without CVRP

**Select findings**
- 4/5 of rebated EVs replaced older, more polluting vehicles
- PHEVs produced strong replacement rates early, but stabilized/rebounding 2/3 are gasoline-1/4 are ≥12 years old
- Vehicle replacement is most often influenced by financial factors, including appealing incentives
- In absence of the rebate, 2/3 of consumers may have used a different vehicle than rebated, 1/3 a non-EV, and 1/3 their old vehicle
- Related research: when compared to buying a new non-EV, rebated EVs may be saving >30 tons of GHG emissions per vehicle (1.2-year life) at costs <$100/tol

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